

U.S. Patent Appln. S.N. 10/535,244
AMENDMENT

PATENT

REMARKS

This Amendment cancels claims 2 and 4-6, amends claims 1, 3 and 7-9, and adds new claims 10 and 11. The silver foam feature of claim 1 is taken from claim 6, while the 1000 A current feature is taken from claim 2. A minor editorial change has been made to claim 3. Claims 7-9 have been amended to depend from claim 3. Claim 10 is similar to claim 1, but is directed to an electrical connection incorporating the electrical insert of claim 1, while new claim 11 recites a process for improving the conductance of an electrical connection. Claims 1, 3 and 7-11 are pending.

This Amendment overcomes the 35 U.S.C. § 112, second paragraph, rejection of claims 2, 7 and 9. The features of claim 2 have been incorporated into claim 1. Claims 7-9 have been amended to specify the seal is a peripheral seal, and have been further amended to depend from claim 3, thereby providing proper antecedent basis for the peripheral seal. Reconsideration and withdrawal of the indefiniteness rejection of claims 2, 7 and 9 are earnestly requested.

This Amendment overcomes the 35 U.S.C. § 102(b) rejection of claim 1 over Japanese Patent Publication 53-80589. The claimed electrical insert comprises silver foam, and the electrical connection is adapted to conduct current greater than 1,000 A.

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Japan '589 fails to disclose these features of the invention. Reconsideration and withdrawal of the anticipation rejection of claim 1 over Japan '589 are earnestly requested.

The 35 U.S.C. § 103(a) rejection of claims 2-9 over Japan '589 in view of U.S. Patent No. 5,360,355 to Ehrler et al. and U.S. Patent No. 6,309,742 to Cluppper et al. is respectfully traversed. As discussed above, the claimed electrical insert comprises silver foam, and the electrical connection is adapted to conduct current greater than 1,000 A.

The cited combination of references fails to raise a prima facie case of obviousness against the claimed electrical insert. The deficiencies of Japan '589, discussed above, are not remedied by the additional disclosures of Ehrler et al. and Cluppper et al. More particularly, none of the cited reference disclose or suggest an electrical insert comprising a silver foam and adapted for use in currents above 1000 A.

Japan '589 discloses a connection in a condenser in an alternating current circuit. An alternating current is limited to a few hundred amperes because above this limit the current will be concentrated on the surface of the conductors causing power loss.

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Degradation of the contacts will be less significant in alternating circuits because the alternating current diminishes electrolysis at the contacts.

The conductivity in connections carrying more than 1000A is very different from low current connections. With currents greater than 1000 amperes, the power dissipated in the contacts becomes significant and results in heating of the connections. Most circuits operating above 1000 A are running at temperatures above 60°C, typically between 80 to 100°C. The increased temperature can cause conductor degradation due to corrosion and increased electrical resistance. In contrast, the temperature of low current connections is close to ambient temperature.

Ehrler et al. discloses a contact apparatus comprising a resiliently compressible contact element in combination with a support element, which limits compression of the contact element when the contact apparatus is placed between two electrical contacts. One of ordinary skill in the art is given no suggestion to substitute a silver foam for the contact apparatus taught by Ehrler et al.

Clupper et al. discloses an open-celled foam substrate which has a metal coating deposited onto the foam's skeletal structure. The resulting metallized foam is said to be useful as a gasket

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shielding for electromagnetic interference (EMI) and/or radio frequency interference (RFI). One of ordinary skill in the art is given no suggestion or motivation to modify Clupper et al. to arrive at a contact device adapted to conduct current greater than 1000 A.

Reconsideration and withdrawal of the obviousness rejection of claims 2-9 are earnestly requested.

New claim 10 is directed to an electrical connection containing the contact device of claim 1, while claim 11 specifies a process of using the contact device. Both claims are patentable for the same reasons as the contact device of claims 1, 3, and 7-9.

It is believed this application is in condition for allowance. Reconsideration and withdrawal of all rejections of claims 1-9, and issuance of a Notice of Allowance directed to claims 1, 3 and 7-11, are earnestly requested. The Examiner is urged to telephone the undersigned should he believe any further action is required for allowance.

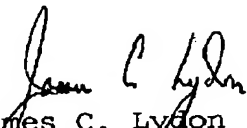
A Petition and fee for a three month Extension of Time are attached. It is not believed any additional fee is required for entry and consideration of this Amendment. Nevertheless, the

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Commissioner is authorized to charge our Deposit Account
No. 50-1258 in the amount of any such required fee.

Respectfully submitted,


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Enclosure:
Petition for Extension of Time